APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/439,608	11/12/1999	GARY LENNEN	59514/WEP/RS	1855

7590 11/23/2004	EXAMINER
WILLIAM E PELTON	KUMAR, PANKAJ

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ART UNIT	PAPER NUMBER
2631	

DATE MAILED: 11/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	**Applicant(s)**
Office Action Summary	09/439,608	LENNEN, GARY
	Examiner	**Art Unit**
	Pankaj Kumar	2631

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>09 August 2004</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>4-16</u> is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) <u>1,5 and 12-16</u> is/are allowed.

6)☒ Claim(s) <u>4 and 11</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments with respect to claims 4, 11 have been considered but are moot in

view of the new ground(s) of rejection.

Response to Amendment

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

3.   Claims 4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lennen

5541606. Here is how the reference teaches the claims:

4.   As per claim 4: An apparatus for tracking remotely generated signals comprising: a first

tracker (Lennen 5541606 fig. 7: 204) for tracking a first component (Lennen 5541606 col. 9 line

39: L1 C/A-code) of a first remotely generated signal (Lennen 5541606: L1 is remotely

generated; fig. 7: 164, 166; also L1 Y-code is unknown and a calculation estimate is made) and

including a W-code signal generator responsive to a second component of the first signal

(Lennen 5541606 col. 9 line 30: L1 Y-code) for generating a first W-code signal from a second

component of the first signal (Lennen 5541606 paragraph 46: "(15) generating an estimate of L1

W code by removing the local replica of L1 P code from the estimate of L1 Y code by the CODE

MIXER 2"); a second tracker (Lennen 5541606 fig. 7: 206) for tracking a first component of a

second remotely generated signal according to the first W-code signal; wherein the second

component of the first signal (Lennen 5541606 col. 9 line 30: L1 Y-code) has the same pattern

(not in Lennen but would be obvious as explained below) as the first component of the second

signal (Lennen 5541606 col. 9 line 63 L2 Y-code) the pattern comprises a known pattern

combined with an unknown pattern (Lennen 5541606 paragraph 18: "Y-code is the modulo-two

sum of an unknown W-code and said known P-code") timing information about the unknown

pattern is known (Lennen 5541606 paragraph 21: "The invention assumes the knowledge of the

timing of the unknown W-code,") the first tracker generates a timing signal in accordance with

the timing information for improving the accuracy of the first W-code signal (Lennen 5541606

fig. 8: 275, 210; fig. 18a: 694).

5.   What Lennen does not teach is wherein the second component of the first signal (Lennen

5541606 col. 9 line 30: L1 Y-code) has the same pattern as the first component of the second

signal (Lennen 5541606 col. 9 line 63 L2 Y-code); however, it would have been obvious to one

skilled in the art at the time the invention was made, to modify the prior art teaching of Lennen

by replacing the unknown Y-code with Y-code that has the same pattern for both L1 and L2

signals because Lennen suggests that Y-code is unknown and its calculation is estimated

(Lennen 5541606 paragraph 18: "Y-code is the modulo-two sum of an unknown W-code and

said known P-code") and it is more efficient to calculate once and use the result for both the L1

and L2 signals than to calculate the Y-code for L1 and again for L2.

6.   As per claim 11: An apparatus for tracking signals comprising: a first tracker (Lennen

5541606 fig. 7: 204) for tracking a first component of a first signal (Lennen 5541606 col. 9 line

39: L1 C/A-code) and for generating a first estimate signal (Lennen 5541606 col. 9 line 28-29:

estimate W-code from estimate of Y-code) from a second component of the first signal (Lennen

5541606 col. 9 line 30: L1 Y-code); and a second tracker (Lennen 5541606 fig. 7: 206) for

tracking a first component of a second signal (Lennen 5541606 col. 9 line 63 L2 Y-code)

according to the first estimate signal (Lennen 5541606 fig. 7: 204's W and other signals going to

L2 tracker 206); wherein the second component of the first signal (Lennen 5541606 col. 9 line

30: L1 Y-code) has the same pattern (not in Lennen but would be obvious as explained below) as

the first component of the second signal (Lennen 5541606 col. 9 line 63 L2 Y-code); the pattern

comprises a known pattern combined with an unknown pattern (Lennen 5541606 paragraph 18:

"Y-code is the modulo-two sum of an unknown W-code and said known P-code") the first signal

is a GPS L1 signal (Lennen 5541606 col. 9 line 30: L1); the second signal is a GPS L2 signal

(Lennen 5541606 col. 9 line 42: L2); the known pattern is a GPS P-code (Lennen 5541606 col. 9

line 25: P-code); the first component of the GPS L1 signal is a C/A-code component (Lennen

5541606 col. 9 line 39: L1 C/A-code); the second component of the GPS L1 signal is a Y-code

component (Lennen 5541606 col. 9 line 30: L1 Y-code); the first component of the GPS L2

signal is a Y-code component (Lennen 5541606 col. 9 line 63 L2 Y-code); the unknown pattern

is a GPS W-code (Lennen 5541606 col. 9 line 28-29: estimate W-code from estimate of Y-code).

7.   What Lennen does not teach is wherein the second component of the first signal (Lennen

5541606 col. 9 line 30: L1 Y-code) has the same pattern as the first component of the second

signal (Lennen 5541606 col. 9 line 63 L2 Y-code); however, it would have been obvious to one

skilled in the art at the time the invention was made, to modify the prior art teaching of Lennen

by replacing the unknown Y-code with Y-code that has the same pattern for both L1 and L2

signals because Lennen suggests that Y-code is unknown and its calculation is estimated

(Lennen 5541606 paragraph 18: "Y-code is the modulo-two sum of an unknown W-code and said known P-code") and it is more efficient to calculate once and use the result for both the L1 and L2 signals than to calculate the Y-code for L1 and again for L2.

Allowable Subject Matter

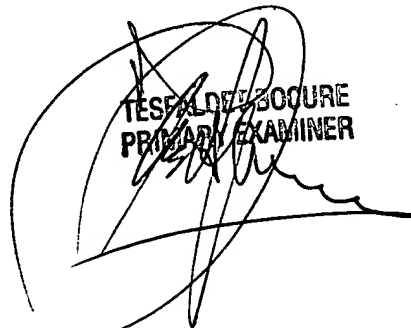8.   Claims 5-10, 12-16 are allowed. See prior action(s) for details.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pankaj Kumar whose telephone number is (571) 272-3011. The examiner can normally be reached on Mon, Tues, Thurs and Fri after 8AM to after 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad H. Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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